

System Testing

Group-29

Software Engineering

1. Signup Test:

Email Constraints:

Should contain the '@' sign with characters both before and after it.

Should not already be registered.

Password Constraints:

Must contain at least one capital letter [A-Z].

Must contain at least one small letter [a-z].

Must contain at least one number [0-9].

Must contain at least one special character [!@#\$%^&*].

Must be between 8-12 characters in length.

Password Confirmation:

Must exactly match the Password.

Name Constraints:

Must contain at least two characters.

Cannot be empty.

Phone Number Constraints:

Must be exactly 10 digits long.

Must contain only numeric characters.

Equivalence Class Partitioning:

Each attribute in the equivalence table that satisfies its constraints is

considered a valid input.

Attributes that fail to meet their constraints are considered invalid inputs.

Equivalence Class Partition:

Test Case (ECP)	Name	Email	Password	Confirm Password	Mobile Number	Result
E1	Valid	Valid	Valid	Valid	Valid	Success
E2	Valid	Valid	Valid	Invalid	Valid	Error
E3	Valid	Valid	Valid	Invalid	Invalid	Error
E4	Valid	Valid	Invalid	Valid	Valid	Error

E5	Valid	Valid	Invalid	Invalid	Valid	Error
E6	Valid	Valid	Invalid	Invalid	Invalid	Error
E7	Valid	Valid	Invalid	Invalid	Invalid	Error
E8	Valid	Valid	Invalid	Invalid	Invalid	Error
E9	Valid	Invalid	Valid	Valid	Valid	Error
E10	Valid	Invalid	Valid	Valid	Invalid	Error
E11	Valid	Invalid	Valid	Invalid	Valid	Error
E12	Valid	Invalid	Valid	Invalid	Invalid	Error
E13	Valid	Invalid	Invalid	Valid	Valid	Error
E14	Valid	Invalid	Invalid	Valid	Invalid	Error
E15	Valid	Invalid	Invalid	Invalid	Valid	Error
E16	Valid	Invalid	Invalid	Invalid	Invalid	Error
E17	Invalid	Valid	Valid	Valid	Valid	Error
E18	Invalid	Valid	Valid	Invalid	Valid	Error
E19	Invalid	Valid	Invalid	Valid	Valid	Error
E20	Invalid	Valid	Invalid	Invalid	Invalid	Error
E21	Invalid	Valid	Invalid	Valid	Invalid	Error
E22	Invalid	Valid	Invalid	Invalid	Valid	Error
E23	Invalid	Valid	Invalid	Invalid	Invalid	Error
E24	Invalid	Invalid	Valid	Valid	Valid	Error
E25	Invalid	Invalid	Valid	Valid	Invalid	Error

E26	Inva lid	Inva lid	Valid	Invalid	Valid	Error
E27	Inva lid	Inva lid	Valid	Invalid	Invalid	Error
E28	Inva lid	Inva lid	Invalid	Valid	Valid	Error
E29	Inva lid	Inva lid	Invalid	Valid	Invalid	Error
E30	Inva lid	Inva lid	Invalid	Invalid	Valid	Error
E31	Inva lid	Inva lid	Invalid	Invalid	Invalid	Error
E32	Inva lid	Inva lid	Invalid	Invalid	Invalid	Error

Boundary Value Analysis:

E-mail	Pass word	Confirm Passwor d	N a m e	Phone Numbe r	Expecte d Output	Actual Output	Reason
a@	Abcd @123	Abcd@12 3	J o	123456 7890	fail	fail	Email constraint (too short)
b@domain.com	Abcd @123 4	Abcd@12 34	A n	123456 7890	fail	fail	Email constraint (missing domain part)
abc@domain.com	Abcd @123 4	Abcd@12 34	J o h n	123456 7890	success	success	Valid case
abc@domain.com	abcd1 23	abcd123	A n	123456 7890	fail	fail	Password constraint (too weak)

abc@do main.co m	ABCD @123 4	ABCD@1 234	J o h n	123456 7890	success	success	All constraints met
abc@do main.co m	Abcd @123	Abcd@12 34	J o	123456 7890	fail	fail	Password not match
abc@do main.co m	Abcd @123	Abcd@12 3	A n	123456 7890	success	success	All constraints met
abc@do main.co m	Abcd @123 4	Abcd@12 34	J o	123456 7890	success	success	All constraints met
abc@do main.co m	ABCD @123 4	ABCD@1 234	J o	123456 7890	success	success	All constraints met
xyz@do main.co m	abc12 34	abc1234	J o	123456 7890	fail	fail	Password constraint (too weak)
abc@do main.co m	Ab1cd @123 4	Ab1cd@1 234	J	123456 7890	success	success	All constraints met
abc@do main.co m	Abcd @12	Abcd@12	J	123456 7890	fail	fail	Name too short
abc@do main.co m	Abcd @123 4	Abcd@12 34	J o h n	12345	fail	fail	Phone number too short
abc@do main.co m	Abcd @123 4	Abcd@12 34	J o h n	123456 789012 34	fail	fail	Phone number too long
abc@do main.co m	Abcd @123 4	Abcd@12 34	J o h n	abcdefgh ijkl	fail	fail	Phone number not numeric
abc@do main.co m	Abcd @123 4	Abcd@12 34	J o	123456 7890	success	success	All constraints met

2. Login Test:

Email constraint:

Required field (cannot be empty) , already registered.

Password constraint:

Required field (cannot be empty) (not checking for another constraints as it is

already stored in database)

Equivalence class partitioning:

Note: Each attribute of the equivalence table which satisfies their constraints is

considered as the valid input otherwise it will be considered as invalid input.

Equivalence Class Partition:

Equivalence Class	Email	Password	Result
E1	Valid	Valid	Success
E2	Valid	Invalid	Error
E3	Invalid	Valid	Error
E4	Invalid	Invalid	Error

Boundary Value Analysis:

Test Case	Email	Password	Expected Output	Actual Output	Reason
Valid Case 1	abc@gmail.com	Password123	Success	Success	Both email and password are valid
Valid Case 2	xyz123@gmail.com	Password123	Success	Success	Valid email, valid password
Invalid Case 1	""	Password123	Error	Error	Empty email (required field)
Invalid Case 2	abc@gmail.com	""	Error	Error	Empty password (required field)
Invalid Case 3	abc@gmail.com	Pass	Error	Error	Password too short (assuming length constraint)
Invalid Case 4	abc@gmail.com	Password1234	Error	Error	Password exceeds maximum length (if constraint exists)
Invalid Case 5	already_registered@gmail.com	Password123	Error	Error	Email already registered
Boundary Case 1	a@b@gmail.com	P	Error	Error	Minimum valid email (edge case)
Boundary Case 2	abcdefghijklmnopqrstuvwxyz@gmail.com	P	Success	Success	Maximum length valid email (assuming max length constraint)
Boundary	abc@gmail.com	P	Error	Error	Minimum valid password (assuming length constraint)

Case 3					
Boundary Case 4	abc@gmail.com	Password123 45678901234 567890	Success	Success	Maximum length valid password

3. Book A Parking Slot Test:

Attributes:

1. Date: The date when the parking slot is being booked.
2. Select Time: The time slot during which the parking slot will be used.
3. Duration (hours): The duration for which the parking slot is booked, in hours.
4. Vehicle Number Plate: The vehicle's registration number plate.

Constraints:

1. Date Constraints:

- Valid Date: Should be a valid date in the future (i.e., after today's date).

- Invalid Date: A date in the past or an invalid date format (e.g., 30/02/2024).

2. Select Time Constraints:

- Valid Time: The time should be in a 24-hour format (e.g., 14:00 or 23:45).
- Invalid Time: Any time in an incorrect format (e.g., 25:00 or 12:60).

3. Duration (hours) Constraints:

- Valid Duration: Must be a positive number, typically between 1 and 24 hours.
- Invalid Duration: Duration less than 1 hour or more than 24 hours (e.g., 0 hours or 25 hours).

4. Vehicle Number Plate Constraints:

- Valid Plate: Must follow the specific number plate format (e.g., ABC1234 or AB 1234 CD depending on local rules).
- Invalid Plate: A number plate that does not match the required format (e.g., 1234 or AB123).

Equivalence Class Partitioning (ECP):

- Valid Date: A valid future date.
- Invalid Date: A date in the past or incorrectly formatted.
- Valid Time: A valid time in the 24-hour format.
- Invalid Time: An incorrect time format or an invalid time value.
- Valid Duration: A positive duration between 1 and 24 hours.
- Invalid Duration: A duration of less than 1 hour or more than 24 hours.
- Valid Vehicle Number Plate: A number plate that follows the correct format.
- Invalid Vehicle Number Plate: A number plate that does not match the required Format.

Test Case	Date	Select Time	Duration (hours)	Vehicle Number Plate	Expected Output	Reason
E1	Valid future	Valid	Positive (1-24)	Valid format (ABC1234)	Success	All attributes are valid
E2	Past date	Valid	Positive (1-24)	Valid format (ABC1234)	Error	Date is in the past
E3	Valid	Invalid format	Positive (1-24)	Valid format (ABC1234)	Error	Invalid time format

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E4	Valid futur e	Valid	Zero or negative	Valid format (ABC1234)	Error	Duration is invalid
E5	Valid futur e	Valid	Greater than 24	Valid format (ABC1234)	Error	Duration exceeds system limit
E6	Valid futur e	Valid	Positive (1-24)	Invalid format (1234)	Error	Invalid vehicle number plate format
E7	Valid futur e	Minimum (00:00)	Minimum (1 hour)	Valid format (ABC1234)	Success	Tests minimum valid values for time/duration
E8	Valid futur e	Maximum (23:59)	Maximum (24 hours)	Valid format (ABC1234)	Success	Tests maximum valid values for time/duration
E9	Valid futur e	Typical (12:00)	Typical (1 hour)	Valid format (ABC1234)	Success	Valid normal case with typical values
E10	Past date	Typical (12:00)	Typical (1 hour)	Valid format (ABC1234)	Error	Date is in the past
E11	Valid futur e	Invalid (25:00)	Typical (1 hour)	Valid format (ABC1234)	Error	Invalid time format (greater than 24 hours)
E12	Valid futur e	Typical (12:00)	Invalid (0 hours)	Valid format (ABC1234)	Error	Duration less than the minimum
E13	Valid futur e	Typical (12:00)	Invalid (25 hours)	Valid format (ABC1234)	Error	Duration exceeds the maximum

Boundary Value Analysis:

Test Case	Date	Select Time	Duration (Hours)	Vehicle Number Plate	Expected Output	Actual Output	Reason
Valid Case 1	2024-12-02	14:00	4	GJ01AB1000	Success	Success	All Attributes are valid.
Valid Case 2	2024-12-05	23:59	2	GJ01CD1000	Success	Success	All Attributes are valid.
Invalid Case 1	2024-11-30	12:00	5	GJ01AB1000	Error	Error	Date is in the past.
Invalid Case 2	2024-12-01	25:00	3	GJ1000AB	Error	Error	Invalid time format.
Invalid Case 3	2024-12-03	10:30	0	GJ01AB1000	Error	Error	Invalid duration (0 hours).
Invalid Case 4	2024-12-04	12:00	25	GJ1000AB	Error	Error	Invalid duration (More than 24 hours)
Boundary Case 1	2024-12-01	00:00	1	GJ01AB1000	Success	Success	All Attributes are valid.
Boundary Case 2	2024-12-02	23:59	24	GJ01AB1000	Success	Success	All Attributes are valid.

Boundary Case 3	2024-12-03	12:00	1	GJ01AB1000	Success	Success	All Attributes are valid.
Boundary Case 4	2024-12-02	12:00	26	GJ1000AB	Error	Error	Invalid vehicle number plate format.

Feedback Test Description

The Feedback Test is designed to validate the user input for the feedback form, where users can provide feedback for a system or service. The form contains the following fields:

1. Name:

- a. Constraint: The name must be at least 2 characters long.
- b. Reason: To ensure that the user provides a meaningful name and does not submit a blank or incomplete entry.
- c. Valid Input: Any name with 2 or more characters (e.g., "John", "Alice").
- d. Invalid Input: A name with fewer than 2 characters (e.g., "A", ""). This will trigger an error.

2. Email:

- a. Constraint: The email must be in a valid format and contain the "@" symbol. It must also be properly structured with text before and after the "@" symbol (e.g., abc@gmail.com).
- b. Reason: To ensure that the email provided by the user is in a valid, recognizable format. An invalid email may cause issues with communication or identification.
- c. Valid Input: A correctly formatted email address (e.g., john.doe@gmail.com).
- d. Invalid Input: An improperly formatted email address (e.g., "abc@gmail", "plainaddress"). This will trigger an error.

3. Feedback:

- a. Constraint: The feedback text must not be empty. It should contain at least one character.
- b. Reason: To ensure that the user provides meaningful feedback and the field is not left blank. This also helps prevent submission of an incomplete form.
- c. Valid Input: Any non-empty text (e.g., "Great service!", "Very helpful").
- d. Invalid Input: An empty feedback field (i.e., no text entered). This will trigger an error.

4. Rating:

- a. Constraint: The rating must be selected from a set of options ranging from 1 to 5, and it must be selected (cannot be left empty).
- b. Reason: To ensure that the user provides a rating, which is essential for feedback analysis. The system will not accept blank or invalid ratings.
- c. Valid Input: A selected rating between 1 and 5 (e.g., 1, 2, 3, 4, or 5).
- d. Invalid Input: No rating selected (empty or missing selection). This will trigger an error.

Boundary Value Analysis:

Test Case	Name	Email	Feed back	Ratin g	Expec ted Outp ut	Reason

Valid Boundary Case 1	Valid name (exactly 2 chars)	Valid email (e.g., abc@gmail.com)	Valid feedback	Rating = 1	Success	Tests the lower boundary for rating (1)
Valid Boundary Case 2	Valid name (2+ chars)	Valid email (e.g., abc@gmail.com)	Valid feedback	Rating = 5	Success	Tests the upper boundary for rating (5)
Valid Boundary Case 3	Valid name (2+ chars)	Valid email (e.g., abc@gmail.com)	Valid feedback	Rating = 3	Success	Tests a valid middle boundary rating (3)
Invalid Boundary Case 1	Empty name (0 chars)	Valid email (e.g., abc@gmail.com)	Valid feedback	No rating selected	Error	Invalid name length (required field)
Invalid Boundary Case 2	Name with 1 character	Valid email (e.g., abc@gmail.com)	Valid feedback	No rating selected	Error	Invalid name length (minimum required 2 chars)
Invalid Boundary Case 3	Valid name (2 chars)	Invalid email (e.g., abc@gmail)	Valid feedback	No rating selected	Error	Invalid email format
Invalid Boundary Case 4	Valid name (2+ chars)	Valid email (e.g., abc@gmail.com)	Empty feedback	No rating selected	Error	Feedback is empty (required)
Invalid Boundary Case 5	Valid name (2+ chars)	Valid email (e.g., abc@gmail.com)	Valid feedback	No rating selected	Error	Rating is not selected (required)

Equivalence Class Partition:

Test Case (ECP)	Name	Email	Feedback	Rating	Expected Output	Reason
E1	Valid name (2+ chars)	Valid email (e.g., abc@gmail.com)	Valid feedback (non-empty)	Rating 1-5	Success	All attributes are valid.
E2	Empty name	Valid email (e.g., abc@gmail.com)	Valid feedback	Rating selected	Error	Name is empty (required field).
E3	Valid name (2+ chars)	Invalid email (e.g., abc@gmail)	Valid feedback	Rating selected	Error	Invalid email format.
E4	Valid name (2+ chars)	Valid email (e.g., abc@gmail.com)	Empty feedback	Rating selected	Error	Feedback is empty (required field).
E5	Valid name (2+ chars)	Valid email (e.g., abc@gmail.com)	Valid feedback	No rating selected	Error	Rating is not selected (required field).
E6	Empty name	Invalid email (e.g., abc@gmail)	Empty feedback	No rating selected	Error	Name is empty and invalid email format.
E7	Name with 1 character	Valid email (e.g., abc@gmail.com)	Valid feedback	Rating selected	Error	Name length is invalid (minimum required 2).
E8	Valid name (2+ chars)	Valid email (e.g., abc@gmail.com)	Valid feedback	No rating selected	Error	Rating is required but not selected.